



THE SOUTH AFRICAN COAL ASH ASSOCIATION (SACAA)

No 27, October 2009

ASH @ WORK

COMMUNIQUÉ OF THE SOUTH AFRICAN COAL ASH ASSOCIATION
from your Editors and President of the SACAA

Editorial

In this, the fourth issue of 2009 there is feedback on the AGM held in August, photos taken at a function in honour of an old-timer, and the usual information on activities of the Council. On the technical side, we report on the De Hoop Dam, CCS, the leaching of ash and provide feedback from ECHA.

Council Matters

The 91st Council meeting was held at SAICE, Midrand on 16 September 2009. It was the first meeting of Council after the AGM the previous month. There is now an extended Council, partly due to the new corporate membership of Sephaku Ash and Ulula Ash.

One of the first activities of the Council meeting was the election of office bearers. There were no changes and the positions previously held by Richard Kruger (President), Wayne Truter (Vice President) and Dieter Heinichen (Treasurer/Administrator) were confirmed. The full list of Council members and alternates appears at the end of this newsletter.

The Council discussed the following matters that were raised at the AGM:

- Awareness of the Competition Commission
- Reporting of ash sales
- Lobbying for new specifications and EN 450
- Cooperative ash research
- Eskom and environmental strategies

Some follow-up actions are envisaged and members can expect feed-back in due course.

Due to the huge ash spill at TVA's Kingston power station last year (see **Ash@Work No 24**), the EPA proposes a declaration of ash a hazardous waste. Immense efforts are under way in the USA to prevent this as utilisation would in effect be stopped. Steps need to be taken locally to enlighten and educate decision makers about the beneficial effects of fly ash; **it is not a waste, but a valuable resource.**

SACAA's website has been updated and now features the logos, with direct links, of all corporate members. A further update of the contents of the website is envisaged. Members are encouraged to advise on potential improvements and updates.

The envisaged Workshop/Seminar on Clean Development Mechanisms (CDM) has now been postponed to some time next year. The delay is partly due to the problem of selecting dates that suit the potential speakers.

Feedback: SACAA 20th Annual General Meeting, 26 August 2009

There was a reasonable turnout of members and proceedings smoothly followed the set agenda. The minutes of the previous AGM and of the audited financial statements were approved, as was the new budget and revised membership fees. This was followed by the President's report, where Richard Kruger detailed attendances at Council meetings, topics of technical meetings and emphasised the importance of maintaining SACAA's international contacts. Because of the latter we are in a position to tap into the valuable information overseas and are made aware of specific trends, especially in the environmental sphere, which sooner or later will impact on the local ash industry. He concluded with thanks to all concerned, especially our sponsors.

After the official part of the AGM members were treated to a very informative illustrated lecture "*Concrete Innovations and Architectural Responses*", by architect Daniel van der Merwe, of C&CI. Finally there was a social gathering with refreshments sponsored by Ash Resources.

Liquid Stone with Soul

Daniel van der Merwe provided several copies of CONCRETE, LIQUID STONE WITH SOUL, a supplement to VISI, a Media 24 Publication. In his capacity as editor of this supplement, he listed the following attributes of the new generation of concretes:

- New high-strength composite concrete mixes allow for thinner, more elegant structures to be cast faster and higher.
- Adding fibres or casting with fibre-textile reinforced fabric reduces the use of steel, resulting in a more environmentally friendly, strong and lightweight product.
- By incorporating additives, concrete mixes can be coloured or stained.
- Concrete can be used under extreme temperature conditions.
- Adding super-plasticisers creates a high-performance self-compacting or flow concrete with a superior finish.
- Surface retarders allow the designer to choose any range of exposed aggregate concrete surfaces, while surface impregnation mixtures protect against stains with a gloss or matt finish.
- Adding a photo catalytic agent such as titanium dioxide, results in a self-cleaning concrete ideal in polluted environments.
- In the future look out for photo engraving, which creates a photo-like effect, luminous concrete that adsorbs energy in daytime to reflect a glow at night, and translucent and optic-fibre concretes that open up a new world of design and lighting possibilities.

Editorial comment: In many of these applications fly ash, as cement extender, plays an important role. Also see *Ash Usage in Full Swing*, Ash @Work No 24, Feb 2009, p3.

National REACH and CLP Helpdesks form a common network - Help Net [ECHA/NA/09/24]

A new, joint network of REACH and CLP (Classification, Labelling and Packaging) helpdesks has been formed and is called Help Net. The objectives of the network are:

- to provide consistent, harmonised answers and the best possible advice to industry
- seeking to fulfill their obligations under the REACH and CLP Regulations, Helsinki, 27 October 2009 [http://echa.europa.eu/doc/press/na_09_24_helpnet_20091027.pdf]

ECHA welcomes all stakeholders [ECHA/NA/09/23]

On 7 December 2009, the European Chemicals Agency (ECHA) organises its third Stakeholders' Day at the Helsinki Exhibition and Convention Centre, Finland. Up to 500 participants are expected to attend. The Day can also be followed on the Internet via webstreaming live and after the event. Participation is free of charge. The ECHA Stakeholders' Days aim to contribute to the development of a constructive relationship, transparency and dialogue between ECHA and its stakeholders. As before, the programme is divided into three sessions, each followed by a Q&A:

1. **Classification and labelling:** ECHA will provide an update on the state of play of the new CLP regulation and the C&L inventory that will be established in 2011. In addition, industry will explain how companies are preparing to fulfill their duties.
2. **REACH enforcement:** ECHA will explain the activities of the Forum for Exchange of information on Enforcement. The European Commission and a Member State representative will provide an overview of enforcement across the EU and at national level.
3. **Registration dossiers and compliance:** ECHA experts and industry representatives will update the audience on best practice in preparing a registration dossier.

You can register via the Events section of the ECHA website. The Stakeholders' Day is open to all but is particularly relevant for organisations working with REACH and CLP, industry associations, companies, public bodies, NGOs, and the media.

The draft programme and further information about the event are available on the ECHA website: http://echa.europa.eu/news/events/3rd_stakeholders_day_en.asp

Carbon Capture and Storage (CCS)

Significant resources need to be put into transforming coal into a cleaner technology. This holds particularly true for South Africa where coal will be an irreplaceable part of the energy mix for a considerable time. Over 400 million tons of CO₂ is emitted annually by South Africa of which 240 million tons can be captured and is available for CCS.

CCS is not a new technology and has been used for decades to enhance oil recovery by pumping CO₂ into nearly depleted oil wells to force out the remaining oil. This has economic advantages but, with the exception of Norway which has a carbon tax, CCS has yet to be commercially deployed purely for reasons of geological storage.

Most advances in CCS are taking place in developed countries, largely to comply with targets agreed to under the Kyoto Protocol.

While South Africa currently lags behind countries in Europe, the USA, Canada, China and Australia the recent establishment of The South Africa Centre for CSS is addressing the situation by facilitating technology transfer.

Sasol is in a good position to implement CCS. They already produce concentrated CO₂ which could be used to demonstrate CCS on a commercial scale.

ECOBA news about next year's conference (see forthcoming events, 16 October 2010, Aachen, Germany)

The conference will consist of three parallel sessions with papers solicited from the three themes Textiles Reinforced Concrete, Modelling of Heterogeneous Materials, and Additions Improving Properties of Concrete. The last session is also addressing **The Use of Fly Ash in Concrete**.

De Hoop Dam

Fly ash is playing its role in assuring the future supply of water to our country.

The De Hoop Dam on the Steelpoort River is an innovative Roller Compacted Concrete (RCC) dam designed by the Department of Water Affairs. When completed in October 2010 it will be the largest RCC dam in the country with a wall just over 1 km long and almost 100 metres in height.

The mix design is a wet high-paste concrete containing 30% fly ash (Dura-Pozz®) Being more workable this mix is easier to compact and accelerates construction.

The denser concrete is suitable for the upstream face of the dam wall. The addition of conventional concrete on the face of the dam to form the water barrier is no longer required saving time and cost.

Serial batch leaching procedure for characterisation of coal fly ash

Although many leaching methods have been used for various purposes by research groups, industries, and regulators, there is still a need for a simple but comprehensive approach to leaching coal utilisation products in order to estimate potential release of heavy metals when these are exposed to natural fluids. A serial batch characterisation method has been developed at the National Energy Technology Laboratory in the USA that can be completed in 2-3 days to serve as a screening tool. The procedure provides an estimate of cumulative metals release under varying pH conditions, and leaching the sample at increasing liquid/solid ratios can indicate the rate at which this process will occur. This method was applied to eight fly ashes. The leachates were analysed for 30 elements; this has shown it to be a reasonably precise method for estimating the availability and long-term release of cations from fly ash.

Journal of Environmental Monitoring and Assessment, ISSN 0167-6369, Reference PA Hesbach, AG Kim, ASP Abel and SC Lamey

Ulula Ash's novel morning function and tribute to Jurgen Meyer

Ulula Ash (Pty) Ltd invited the local ash fraternity to a morning function at Velmore Estate, Erasmia, Pretoria.

The audience was enlightened about the historic development of South Africa's ash industry by SACAA president, Richard Kruger. This was followed by Dave Bath recounting Jurgen Meyer's involvement in getting ash utilisation commercialised.

Finally, the official part was concluded when Calvin Billett presented Jurgen with a commissioned painting (on a distant view of Matla and Kriel) by the well-known artist Eric Bolsmann. A surprised and grateful Jurgen Meyer, who had retired to the Cape several years ago, thanked the sponsors.



[Photos by Theresa Gilmore of Ulula Ash (Pty) Ltd

The second part of the morning was enjoyed with good refreshments and impressive antics by the comedian Darren Maule, well-known by the weekly programme "Last Say on Sunday" on SABC3.

Editorial comment: A good time was had by all and the rather unknown venue is now on the map as it will serve as the base for the German National Team during the 2010 FIFA World Championship.

Another Award

SACAA's Vice-President, Dr WF Truter, has gained another award, this time for the best paper presentation by a Young Scientist titled "*Re-vegetation strategies of cover soils and coal discard material*" at the 44th Annual congress of the Grassland Society of Southern Africa.

Editorial comment: Congratulations Wayne! Ash and agriculture needs your research dedication!

LAST SNIPPET

The Power of ONE:

- ❖ if all American households switched off their lights for ONE hour a year it will save 16 500 tons of CO₂ being emitted
- ❖ if the thermostats in every house in the USA were lowered by ONE °C in winter it would save 350 million barrels of crude oil
- ❖ if ONE passenger per flight in the world packed ONE kg less luggage, enough fuel would be saved to fly ONE Boeing 737 around the world 700 times

FORTHCOMING EVENTS

SACAA Technical Meeting, at SAICE, Midrand, 18 November 2009 at 15:00

Presentation by Dave Miles , National Quality and Technical Manager , Lafarge, on self compacting concrete, utilizing fly ash.

Advanced Concrete Materials, 17-19 November 2009, Stellenbosch

Organiser: Concrete Society of Southern Africa and Stellenbosch University

Website: www.concretesociety.co.za/acm2009 Enquiries: admin@concretesociety.co.za

4thInternational Cement Trade conference, 20 April 2010, Istanbul, Turkey

Conference website: www.cementtrade.net

Moscow Power Engineering Institute, Ash Workshop, 22-23 April 2010, Moscow, Russia

Conference website: www.ecopower.ru

International Conference on Sustainable Construction Materials, June 2010, Ancona, Italy

International Conference on Material Science and 64th RILEM Annual Week, 16 October 2010, Aachen, Germany

Conference website: www.matsci2010.rwth-aachen.de

YOUR SACAA COUNCIL

Elected Members:	Corporate representatives [& alternates]:
Richard Kruger (President)	Afrisam:
Wayne Truter, UP (Vice President)	Mike McDonald
Dieter Heinichen (Treasurer/Administrator)	[Amit Downeeringen]
William Burtone, PPC	[Eunice Mguqulwa]
Karen Surrudge, UP	Ash Resources:
Sabine Verryn, XRD Analytical and Consulting	Matthew Reynolds
	[Andrew McKeen]
	C&CI:
	John Goodman
	Eskom:
	Tyrone Singleton
	Lafarge SA:
	Lebogang Mandiwana
	PPC:
	Eduardo Auger
	[Walter Wirth]
	Sephaku Ash:
	Hennie van Heerden
	Ulula Ash:
	Theresa Gilmore
	[Mark Hovy]

The editorial team would welcome any information for publication in forthcoming **Ash@Work** newsletters.

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Disclaimer: *The views expressed in this newsletter are not necessarily those of the Council of the South African Coal Ash Association*